Energy Division Staff Paper

2012-2020 Energy Efficiency Goal Setting: Technical and Policy Issues

May 12, 2008

The contents of this paper represent the thoughts and positions of Energy Division Staff. They do not represent the positions taken by Commission.

Topics

Technical Responses

1) Cumulative savings treatment - do decayed measures get reinstalled and credited to utility program or naturally-occurring savings if they die during forecast period? How are they tracked and accounted for?

The goals study used the total gross market savings and naturally-occurring savings forecasts from the 2008 California IOU Potential study as key inputs. In the 2008 Potential study, the accounting used to track savings from measure adoptions depends on the type of measure being analyzed. Some measures are automatically re-installed in the model at the end of their EUL. For other measures, adoption is re-modeled at the end of the EUL.

- If a measure is reinstalled during the forecast, the total gross savings are maintained over time with no decay.
  - In the ASSET model, for measures that are not automatically reinstalled ("autorep"), at the end of their EUL, they re-enter the adoption model. At this point, the model estimates the number of re-adoptions both with and without incentives in the same manner as is done for first-time adoptions.
  - It is important to note, however, that the relative proportions of forecasted naturally-occurring adoptions compared to gross adoptions with incentives would be the same for re-adoptions at the end of a measure's service life as they would for first-time adoptions if all of the key parameters remain the same (e.g., incremental cost, per unit savings, customer awareness and willingness, market applicability, rates, and avoided costs). Longitudinal changes in these key input parameters would lead to differences in estimated adoptions as a function of the size of those differences and the relative contribution of each of those parameters to the adoption estimates. Since the current analysis does not include forecasts of major longitudinal changes in incremental costs and per unit savings or rates, measures that were adopted the first time

are likely to be re-adopted again at the end of their measure life.

- There were a limited number of measures that were modeled as being automatically reinstalled at the end of their respective EULs. In the total gross savings accounting, automatic reinstallation of a measure maintains gross savings at a constant level over time.
    - The automatic reinstallation is modeled as re-adoption without a rebate. In this respect, savings from "auto-rep" measures are counted as program savings for first-time adoptions but are then counted as naturally-occurring savings upon re-adoption at the end of first EUL.
    - In the 2008 potential update study, automatic reinstallation was assumed for a select set of measures, namely lighting fixtures and industrial measures. Lighting fixtures include linear fluorescents, pulse start metal halides, and CFL fixtures.
    - In the case of lighting fixtures, the reasoning behind modeling these measures as automatic reinstallations was based on engineering-related realities in that fixture conversions are highly likely to be permanent, with little to no chance of down-grading at the end of the first EUL.
    - Industrial sector measures were modeled as auto-rep based upon the fact that industrial programs (e.g. SPC) require site-specific assessments that disqualify customers from receiving rebates for replacing existing efficiency measures that have reached the end of their EUL. In this respect, all re-adoptions of high-efficiency industrial measures occur outside of utility programs, which is consistent with the accounting applied to automatic reinstallations in the ASSET model.

- In the case of high efficiency measures that are already in place in year zero of the forecast and reach the end of their EUL during the forecast period, the 2008 potential update study used two different accounting methods, depending on the type of pre-existing measure.
    - If a high efficiency replace-on-burnout measure (e.g. CFLs, chillers, and refrigerators) existed at the beginning of the forecast, the energy savings derived from that measure are

not counted in the savings forecast over the course of the measure's EUL. If this measure reaches the end of its EUL during the forecast period and is re-adopted with a rebate, then the savings accrued upon re-adoption are counted in the forecast.

- In the case of CFLs, it is important to note that Itron modified this savings accounting in the Goals Study scenario to specifically credit all post-2011 adoptions of general service CFLs (whether first-time adoptions or re-adoptions, with or without rebates) to implementation of the Huffman Bill.

- If the pre-existing measure is a conversion measure (e.g. insulation measures and lighting fixtures), then the measure is assumed to be automatically reinstalled outside of utility programs at the end of its EUL, and the energy savings derived from that measure are never counted in the total market gross savings forecast.
- Similarly, if the pre-existing measure was in the industrial sector, then the measure is assumed to be automatically reinstalled outside of utility programs at the end of its EUL, and the energy savings derived from that measure are never counted in the total market gross savings forecast.

2) Are achievable energy savings defined at customer level or generation level?

All energy savings forecasted in the Itron Goals Study are at the system, or generation, level. That is, savings are increased from the meter by estimates of T&D losses provided by the IOUs.

3) Does Itron intend to reconcile NTG estimates produced in ASSET with the NTG values from the DEER update for 2009-2011 programs: Are reruns necessary?

Itron does not feel that reruns are critical to account for the new NTG numbers in the DEER update given all of the issues and schedules that have to be balanced in this process. The 2008 Itron potential update study used as much emerging NTG data available at the time of the study as possible. These data included the results from the 2004-2005

Single Family Rebate evaluation and preliminary results from the 2004-2005 Standard Performance Contracting evaluation (which did not differ from the historic SPC NTFR results), along with other relatively recent market share data from CEUS, RASS, CLASS, and RMST.

As a result of calibrating to these more recent sources, the implied NTG associated with the ratio of forecasted naturally occurring to market gross savings in the 2008 IOU Potential study results range from roughly 0.6 in base restricted market potential scenario to 0.75 in the full restricted market potential scenario. How these values compare to the weighted average NTG associated with applying the draft 2008 DEER NTFR values to existing or planned IOU portfolios requires an estimate of the portfolio-weighted NTG value. It is expected that the differences are modest and within the range of uncertainty estimated around both the gross and naturally-occurring savings in the Goals Study. It also should be remembered that calibration between the results of a forecasting model and results from recent NTG results associated with a particular historic vintage of program and market characteristics can only be approximate.

We recognize that the draft 2008 DEER update includes more than simply changes in NTG ratios. Updating the potential and goals studies to be entirely consistent with the new DEER is also not possible within our current timeline. However, the 2008 IOU Potential study is already consistent with some of the major proposed updates to DEER, including CFL EUL and hours of operation. Given that study used the newest data available at the time of the study, and the project team, which included the IOUs, the CPUC, and the CEC, extensively reviewed, and at times adopted modifications to, the existing potential study savings values, we do not feel that the results are systematically biased or outdated.

Re-running and attempting to further re-calibrate the bottom up utility potential study to the draft 2008 DEER data would be fairly time consuming. Given the fact that the potential study incorporates many of the key updates in available research as the new DEER, the Potential and Goals studies include scenario and uncertainty ranges, and that a re-run of the potential model and re-incorporation into the Goals analysis would be very time consuming, we do not believe that a

re-run of the potential models is necessary at this time. However, further updates of potential may be considered in 2010-11.

4) Itron's model does not account for long-term effect of increased focus on reducing GHG gases on the estimates of net to gross for utility. Can the model be modified to incorporate this reality?

It is not entirely correct that Itron's models do not account for changes in customer adoption behavior due to "focus on reducing GHG gases", market effects, or other factors influencing adoption decisions. In Itron's ASSET model, which forms the foundation of Itron's forecasts of achievable potential from utility programs, customer adoption is a function of both measure cost-effectiveness from the customer's perspective and customers' awareness and willingness to adopt a given EE measure. In Itron's 2008 potential update study, changes in awareness and willingness grow over time as a function of the level of utility program funding (e.g. higher funding, higher awareness). As part of the 2008 update study, Itron also analyzed a scenario where awareness and willingness also grew independently of utility program funding. These alternative awareness and willingness assumptions were explicitly designed as a proxy for changes in customer adoption behavior driven by market effects, including changes in customer preferences. In this higher awareness and willingness scenario, estimated total gross savings potential increased, mostly due to increases in naturally-occurring adoptions, which in turn drove an overall decrease in portfolio NTG.

In the case of Itron's scenario assessment tool as developed for and applied in the Goals Study, the Itron team also attempted to characterize a range of potential change in customer adoption behavior by including end-use- and scenario-specific uncertainty ranges. Specifically, the uncertainty ranges developed for naturally-occurring potential were developed to reflect uncertainties in current estimates of baseline measure saturations and costs, as well as uncertainties and possible changes in customer adoption preferences, including but not limited to changes in preferences driven by concern over climate change. That said, there is obviously considerable uncertainty regarding the extent to which concerns of climate change will induce little, modest, or dramatic changes in end users' adoption of energy efficiency measures as compared to recent history.

5) What would be the impact on estimates of economic and achievable potential if new avoided cost updates would be included?

It is not possible to precisely estimate the impact of new avoided costs on the potential study estimates at this time. However, from the energy efficiency supply curves developed as part of the potential study, it appears that a 20% increase in avoided costs could result in a 5 to 10% increase in economic potential. The affect on achievable potential is more difficult to estimate since achievable is also affected by changes in rates (since direct end user bill savings are the basis for end users' economic analysis, not avoided costs). In either case, the range of impact is likely already captured within the uncertainty ranges provided in the Goals Study report. As noted previously regarding the time required for re-running the potential models for DEER updates, and the fact that the avoided cost changes are likely to be captured within the existing uncertainty ranges, we do not plan to conduct further model re-runs at this time. However, further updates of potential may be considered in 2010-11.

6) What would be the impact of using NTFR in most recent DEER update vs. the ones currently in the model?

Same as response to question 3.

7) The assumption that utility programs will pay the full incremental cost of energy efficiency measures creates serious issues about the cost of programs, cost-effectiveness, and the ability of utilities to meet goals. Asks Itron to defend its prediction in the full market or full incremental costs case that increasing rebates to 100% of incremental measure cost will lead "to 60% increase in net energy savings by 2020."

Itron's forecasts of gross and naturally-occurring savings under the assumption of full incremental cost rebates are based on a modeling framework that forecasts measure adoption based on, among other things, customer awareness of the measure and its economic attractiveness to the customer (e.g., simple payback or lifecycle cost)

and a parameter that represents the sensitivity of adoption to changes in economic attractiveness. As with the data behind all adoption models currently used to forecast achievable energy efficiency potential, the payback parameters used in ASSET are based on a fairly limited set of historical data that represent a fairly narrow range of economic attractiveness-adoption relationships, and thus the relative uncertainty of the predicted economic attractiveness-adoption relationships increases when payback values and other study- and time-dependent characteristics (e.g., measure costs and performance features) move out of this narrow range.

As part of the Goals Study, the Itron team developed uncertainty ranges by end use and scenario to explicitly reflect these inherent uncertainties in adoption modeling, as well as other key uncertainties in baseline end-use and measure data. Importantly, as Itron discusses on pages 101-102 in the Goals Study report, it should be recognized that the level of program savings forecasted in the full market potential scenario might also be achieved from an improved set of IOU programs and innovative delivery mechanisms that are highly effective at increasing EE adoptions with rebate levels below full incremental cost. The goal levels recommended by Staff therefore do not necessarily require IOUs to offer entire portfolios of 100% incremental cost rebates.

A more meaningful and relevant way to evaluate the ability of the IOUs to meet the recommended goals is to examine the proposed goal levels in terms of their implied share of economic and technical potential that IOUs need to capture, rather than in terms of the certainty of a model's ability to predict X% increase in net savings due to Y% increase in incremental cost rebates given the limitations of available program tracking, saturation, market share, revealed preference, and evaluation data. Using data from the tables in Chapter 4 of Itron's Goals Study report, it is possible to calculate such benchmarks. Table 1 below presents a summary of these benchmarks for key end uses in both the base and full market potential scenarios for electric energy savings.

Table 1: Savings Estimates Compared to Potential: Incentive Levels

End Use:	Savings Relative to Economic Potential:		Savings Relative to Technical Potential:	
	Base Restricted	Full Restricted	Base Restricted	Full Restricted
Res Space Cooling	52%	78%	21%	31%
Res Lighting	38%	68%	32%	57%
Com Space Cooling	45%	70%	41%	63%
Com Refrigeration	31%	43%	29%	41%
Com Interior Lighting	35%	52%	32%	47%
Industrial Pumps	48%	64%	48%	63%
Industrial Lighting	48%	89%	47%	80%
Total	**39%**	**61%**	**32%**	**51%**

This tables shows that achievable savings in the full market potential scenario are estimated to reach approximately 50-70% of economic potential and 40-60% of technical potential by 2020 for the most important sources of achievable savings – namely residential and commercial lighting, commercial space cooling, and commercial refrigeration – compared to 30-45% of economic potential and 30-40% of technical potential in the base market scenario.

8) What is the projected cost to ratepayers given the model's use of full incremental cost?

The total cumulative program costs (2007-2020) in the full incremental cost scenario are estimated to be approximately $9.4 billion in 2007 present value terms. Compared to the cumulative gross savings estimated in the full incremental cost scenario, this is equivalent to approximately $0.50/first-year kWh. To accurately convert this $/first-year kWh to an equivalent levelized cost, it is necessary to calculate the portfolio-weighted average EUL. Currently, no such weighted-average EUL estimates have been made. Assuming a weighted-average EUL of 8-12 years, and 5% real discount rate, the forecasted program costs in the full incremental cost scenario are equivalent to a levelized cost of roughly $0.04-0.06/kWh.

9) If MPR is used as avoided cost input, shouldn't the projected growth of the MPR be used as a dynamic input into the scenario modeling?

See answer to Q5. Itron's scenario assessment tool does not estimate TRC or cost-effectiveness, as stated on page 8 of the Goals Study. The analytic framework of the scenario assessment tool was explicitly designed to build upon the detailed cost-effectiveness assessments (including year-to-year assessments of avoided costs and TRC) and adoption modeling produced by Itron's ASSET model in such a way as to enable other, policy-driven "what if" scenarios to be layered on top of the latest ASSET results in an internally consistent manner.

10) Until specific methodologies are identified for accurately measuring the individual components of the total market gross goal and funds are committed to perform the necessary measurement studies, it is premature to establish total market gross goals.

From a technical perspective, it is not true that the CPUC needs to develop specific methodologies to accurately measure the individual components of the total market gross goal, before they can measure or estimate the total market gross savings goals. In fact, estimating total market gross savings is much easier than attributing savings to particular interventions, changes in social norms, or market forces. There are certainly measurement methods available to estimate the total level of energy and peak savings observed in any given market without solving the problem of how to separate or attribute credit for the portion of savings that comes from utility programs or building and appliance standards. For example, surveys that estimate equipment and measure saturation levels for the entire market can be done periodically to estimate total efficiency adoptions from one point in time to another, which can be converted into estimates of total efficiency savings.

11) What level of savings per capita as a % of consumption does the Mid-case goals scenario represent? Annual and cumulative?

Estimation of savings per capita requires estimates of population changes over the forecast period that are internally consistent with the CEC's reference forecast. Staff and its contractors do not have this data in hand currently and hence no estimates of savings per capita nor annual percent changes in consumption per capita have been made.

12) Where is the baseline from the model's perspective – 2004/2008/2012?

2008 is the first year of the forecast.

Policy Responses

1) Why move to a hybrid goal from a net goal? What are the functional assumptions between the TMG and the IOU expanded net?

Background

The current set of goals adopted by D. 04-09-060 were based loosely on a 2002 study of energy efficiency potential by KEMA-Xenergy (the "Secret Surplus" study) and the CEC's study of achievable savings presented in a 2003 document entitled *Proposed Energy Savings Goals for the State of California*. The KEMA-Xenergy study estimated energy efficiency potential in a bottom-up forecasting framework, while the CEC study looked at achievable savings as a function of program savings and trends in program yield, kWh and kW per dollar of program spent. The CEC study recommended that goals be set at 90% of what the Secret Surplus study estimated under its "Maximum Achievable" potential scenario for ten years.[1] This aggressive goal to capture 90% of potentially achievable savings was consistent with the policy goal of reducing per-capita consumption by a certain percentage. Thus the current goals used the KEMA-Xenergy study and the CEC study as a foundation to support the CPUC policy of rapidly expanding the level of energy savings and, as the CEC study recommended, meeting at least half of the expected growth in demand through energy efficiency.

The savings potential identified in the Secret Surplus study were net savings that excluded savings forecasted for naturally-occurring potential. Because naturally-occurring savings were forecasted to be constant, the net savings were estimated to increase as gross savings grew in response to increasingly aggressive scenarios of program intervention and funding. The net-to-gross ratios implicit in the Secret Surplus study results were 0.78, 0.88, and 0.92 under that study's Base, Aggressive, and Maximum Achievable scenarios,

[1] KEMA-Xenergy's "maximum achievable" scenario assumed rebates equal to 100% of incremental measure costs and is thus directly analogous to Itron's "full" market potential scenario in the 2008 potential update study.

respectively. Thus, the current goals, which are in net terms and are referential to the savings estimates in the Secret Surplus study, have an implicit NTG of roughly 0.9.

Why change?

The net savings metric as developed and applied in the current IOU goals and RRIM was designed to encourage utility program managers to maximize the effectiveness of spending ratepayer dollars without considering the impact of their programs on future building or appliance standards or the market as a whole.

However, as we approach a period where the number of new programs operated by different administrators is likely to increase as part of a larger strategy to reduce carbon emissions, it will be important for utility administrators to not only track all program-induced energy savings happening in their service territory but to also create, and potentially get credit for, positive interactions between utility programs, marketing campaigns, market transformation efforts, and new standards in order to maximize savings for society as a whole. In addition, the CPUC has indicated that it will consider recognizing any utility-induced savings from codes and standards that can be clearly linked to utility efforts to develop and prove out technologies eligible to be covered by building or appliance standards. Thus, in order to stimulate utility efforts to promote more total program savings, Staff propose that total market gross savings may be an additional indicator of administrator performance.

In sum, Staff proposes to establish two metrics to track utility administrator performance: 1) expanded net savings to account for the direct and indirect impacts of their programs and encourage program managers who work cooperatively with others to increase the overall energy savings achieved, and
2) total market gross savings to track total energy savings accomplishments across all policy and market mechanisms.

Functional assumptions:

The hybrid goal structure as proposed by Staff is based on two types of energy efficiency potential. The prospective interactions between

these types of potential make up much of the functional innovation of the hybrid approach. The first and most familiar type of energy efficiency savings is program-induced savings from utility programs representing cost effective potential as modeled by the Itron 2008 Potential Study using primarily the current suite of measures and calibrated to recent (04'-05') levels of adoption. These results were then incorporated into scenarios and presented in the Itron Goals Report in figure 6-10 and labeled as IOU Programs. The IOU Programs wedge in Figure 6-10 represents savings including the current definition of *naturally occurring savings*.

The other type of energy efficiency potential included in the Staff Recommendation for goals is based on savings targets or milestones set in either state legislation, the Commission's D. 07-10-032, or in Strategic Planning documents. These savings are presented in Figure 6-10 of the Itron Goals Update Report and labeled as BBEES, T24+Fed Standards, and Huffman Bill. This represents the potential savings that would occur if a certain degree of success in achieving the milestones is met. These savings are not based on any cost-effectiveness inputs, but are calculated using measure-based savings assumptions and assumptions about the effectiveness and reasonable market penetration of these programs.

By setting utility goals higher than the level that could be achieved given a fixed measure base and business-as-usual programs, the Staff Recommendation is implicitly requiring utility programs to evolve and contribute to the achievement of savings beyond traditional utility programs alone, as described in the Statewide Strategic Plan.

2) What is the real world use of a total market gross (TMG) goal? How will it be measured?

TMG savings goals are proposed for consideration to give all parties who administer programs an incentive to work together to maximize the savings produced by the coordination of their respective programs. The State is better off if the administrators of building codes and appliance standards work together with utility and local government program administrators. Setting goals solely based on net savings, as currently defined, encourages parties to work in a vacuum and may actually encourage utilities and CEC standards staff to not work

together due to utilities fear that ambitious new standards will reduce the potential savings and incentives they can achieve for shareholders. This is because new standards by definition reduce savings potential for utility programs in the short run.

However, a simple focus on the TMG goal does not encourage administrators to be efficient. In addition to setting TMG goals, it is crucial to also set parallel net savings goals based on an expanded definition of net savings to provide utilities with an incentive to maximize the effective use of their program dollars. Measurement of net savings encourages utilities to select program designs that maximize the effectiveness of ratepayer dollars and is consistent with the principles of the recently adopted shareholder incentive mechanism. This mechanism was carefully calibrated to ensure utilities were only rewarded for the program efforts that could be clearly linked to verified savings in order to protect ratepayers from paying too much for delivered savings.

How will it be measured?

Total market gross savings can be measured using periodic and comprehensive equipment and energy-efficiency measure market saturation and penetration studies in conjunction with the existing market effects, impacts, and codes and standards protocols. The key to developing a quality estimate is to gather good market information on what is actually being sold in the market and developing a solid estimate of the likely baseline trends in energy use and efficiency levels. Estimates of compliance-adjusted federal and state building code and appliance standards along with comprehensive market saturation data could be used to produce a first order analysis along with improved estimates of per unit energy savings and load shape impacts. TMG should be conceptually easier to measure than the current utility net because of the simplicity in not having to determine causation, although the scope and level of effort required would be significant.

3) What is the definition of expansive net? What counts toward it? What is its interaction with a reauthorized incentive mechanism?

The Staff Recommendation echoes the Itron Goals Update Study suggestion that the Commission consider a broader definition of "net" savings. The purpose for redefining net savings is to widen the scope of utility programs and align policy mechanisms with this objective. To attain the next level of energy efficiency achievements in CA the Commission will have to direct utilities to impact savings through a wide variety of mechanisms and program designs in addition to traditional incentive programs. The initial blueprint for these types of actions exists in the Statewide Strategic Plan where utilities are identified as the best entity to spearhead certain top strategies.
It may be beneficial to the discussion of the Staff Recommendation to illustrate conceptually the proposed definition of expansive net savings. The current definition of net can be compared to expanded net and matched to the wedges in the Figure 6-10 from the Goals report. In some cases there is not a one to one match between the net definition and the wedges presented in the Itron Goals Update Report.

a) Composition of Total Market Gross savings- all reasonably expected to occur (achievable) savings from utility programs, state and federal building and appliance standards, local government initiatives. Includes future market effects and naturally occurring savings. Could later include savings from Cap and trade system or carbon taxes when they are implemented. Gross Savings Wedges = All wedges in Figure 6-10 in goals report (reproduced in Figure 1 below).

b) Current CPUC Net definition: Current net = program gross savings less free riders. Current net wedges = Wedge B: IOU Programs only- does not include Wedge A: Naturally Occurring savings.[2] The "free rider savings" must be subtracted out of the utility gross savings to yield net savings.

c) Proposed Expansive Net definition:
Expansive Net = Current Net Program savings + Utility program-induced market effects

[2] In the current definition, some portion of program-induced market effects from prior year programs (if any), would likely be included in estimates of free riders and naturally occurring.

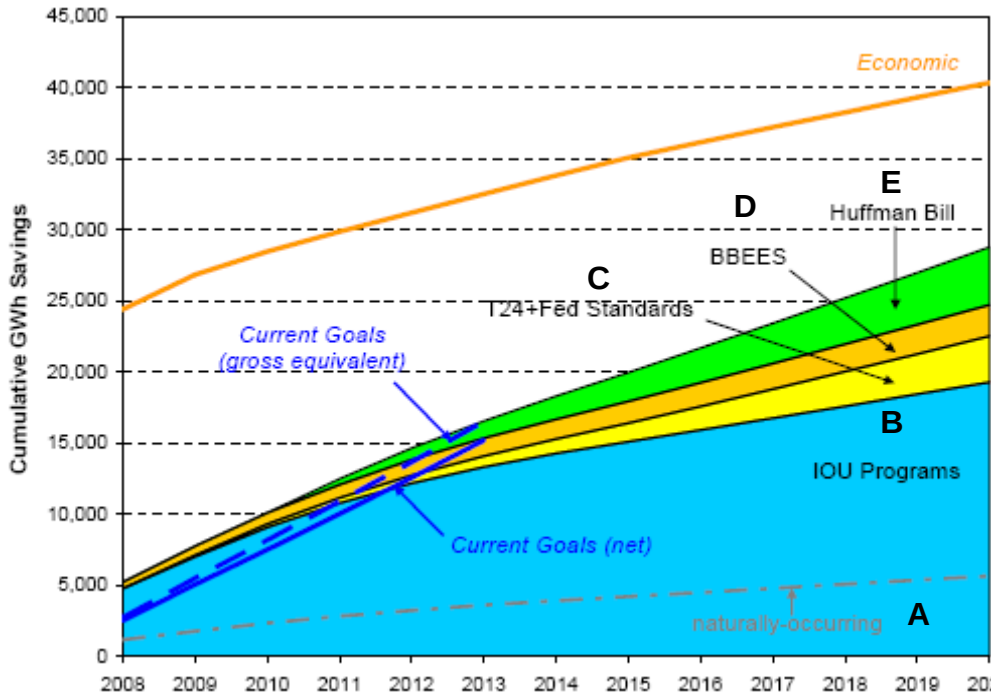
Where Utility program-induced market effects =
utility share of the savings from new Codes and Standards
+ utility share of any new Compliance enhancement program
+ utility share of any market transformation programs such as the big and bold strategies[3]

(Note that Expansive Net savings do not include pure free riders.[4])

This is illustrated in Figure 1 below (Figure 6-10 reproduced from Goals Update Report).

Expansive Net diagram wedges = Portion of Wedge A + Wedge B + Portion of Wedge C + Portion of Wedge D.

Figure 1: Mid Case Scenario (Figure 6-10)

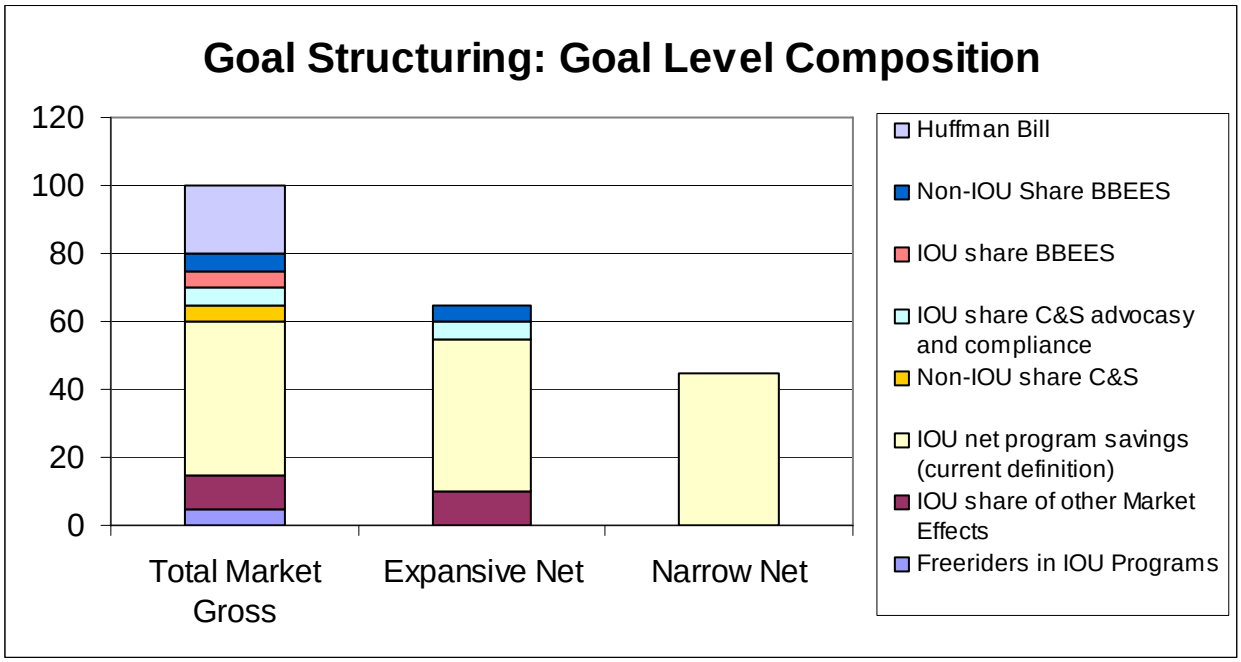


[3] "MARKET EFFECT - A change in the structure or functioning of a market or the behavior of participants in a market that result from one or more program efforts. Typically these efforts are designed to increase in the adoption of energy-efficient products, services or practices and are causally related to market interventions." p. 230, California Energy Efficiency Evaluator's Protocols

[4] That is, free riders exclusive of program-induced market effects.

The proposed definition of expansive net can also be better understood by comparing it to the current definition of net and to the definition of TMG. Figure 2 below presents a composition of savings across mechanisms.

Figure 2: Composition of savings across mechanisms in the Mid Case



4) How do the proposed goals interact with a reauthorized incentive mechanism?

The Risk Reward Incentive Mechanism was authorized through the 2009-2011 program cycle. Prior to the 2012-2014 program cycle the achievements of the mechanism would be thoroughly evaluated. This would include evaluating the impact it had generating savings in harder to reach segments, a process evaluation of the structure and logic of the mechanism, and recommendations on how to improve both. It may or may not be determined that the mechanism needs to be reauthorized as another mechanism, the energy and natural gas sector cap and trade mechanism under AB32 may produce a similar effect.

It is premature to speculate how a revised set of hybrid gross or net savings goals would interact with the adopted RRIM mechanism. Staff

believes it will be important to set realistic gross and net savings goals for the period 2012 through 2020 first, and then construct or redevelop a risk reward mechanism consistent with those choices; rather than attempting to speculate how the current RRIM mechanism might change if a new set of savings goals were adopted now. The detailed interaction between savings goals and the incentive mechanism need to be discussed and debated within the context of the more general evaluation of the relative effectiveness of the current mechanism anticipated in 2010.

5) What protocols exist to measure TMG and IOU Expansive Net? What would have to be developed and by when?

Several existing protocols can contribute to estimation of TMG and IOU EN, including Gross Load Impacts protocols, Information and Education Protocols and the Market Effects protocols. Consideration will be given to whether additional protocols or refinements to existing protocols are necessary to support these proposed goal definitions.

6) Revisiting Goal Levels: What inputs are most important to a goal revision that would occur during 2010 – 2011?

- New saturation of measures
- New calibration years – 2006-08 instead of 2004-05.
- New NTG ratios
- New measure suite
- New avoided costs resulting in new rates
- New program initiatives or delivery mechanisms
- Major changes in per unit measure costs and savings